



# Project management for construction companies with Microsoft technologies

+ Case study

WHITE PAPER



Powered by  
 Microsoft

# Content

---

- 1. **Introduction**.....3
- 2. **What is Dynamics 365 Project Operations?** .....4
  - How to make projects more predictable.....5
  - The whole project lifecycle in one solution.....6
- 3. **Construction project management with proMX** .....11
- 4. **Case study: all covered in one solution** .....13

# Introduction

---

Whenever a new house is built, a school renovated or a rail network expanded, construction project management comes into play. In the construction industry, project management describes the planning, organization, coordination and control of work processes involved in creating or modifying a construction object.

The larger a project is, and the more internal and external team members are involved, the more complicated its management gets. Also, construction companies need to consider aspects like modern building technologies, sustainability, or energy-efficiency for their objects.

To tackle the unique challenges, you face in construction projects, you need an appropriate end-to-end software solution.



**In this white paper, construction companies will learn how to manage their projects more easily with Microsoft Dynamics 365 Project Operations and proMX 365 for Construction.**

# What is Dynamics 365 Project Operations?

Microsoft Dynamics 365 Project Operations is a comprehensive project-business solution. It combines all project-related processes of a service company in one solution – from sales to project and resource management, project handling to accounting and reporting.

## What Project Operations covers



### Before the project

- Project sales
- Project planning



### During the project

- Resource management
- Project management
- Productive collaboration
- Time and expense tracking
- Project controlling



### After the project

- Billing
- Reporting

Dynamics 365 Project Operations supports construction companies with all their building projects no matter the scope or complexity.

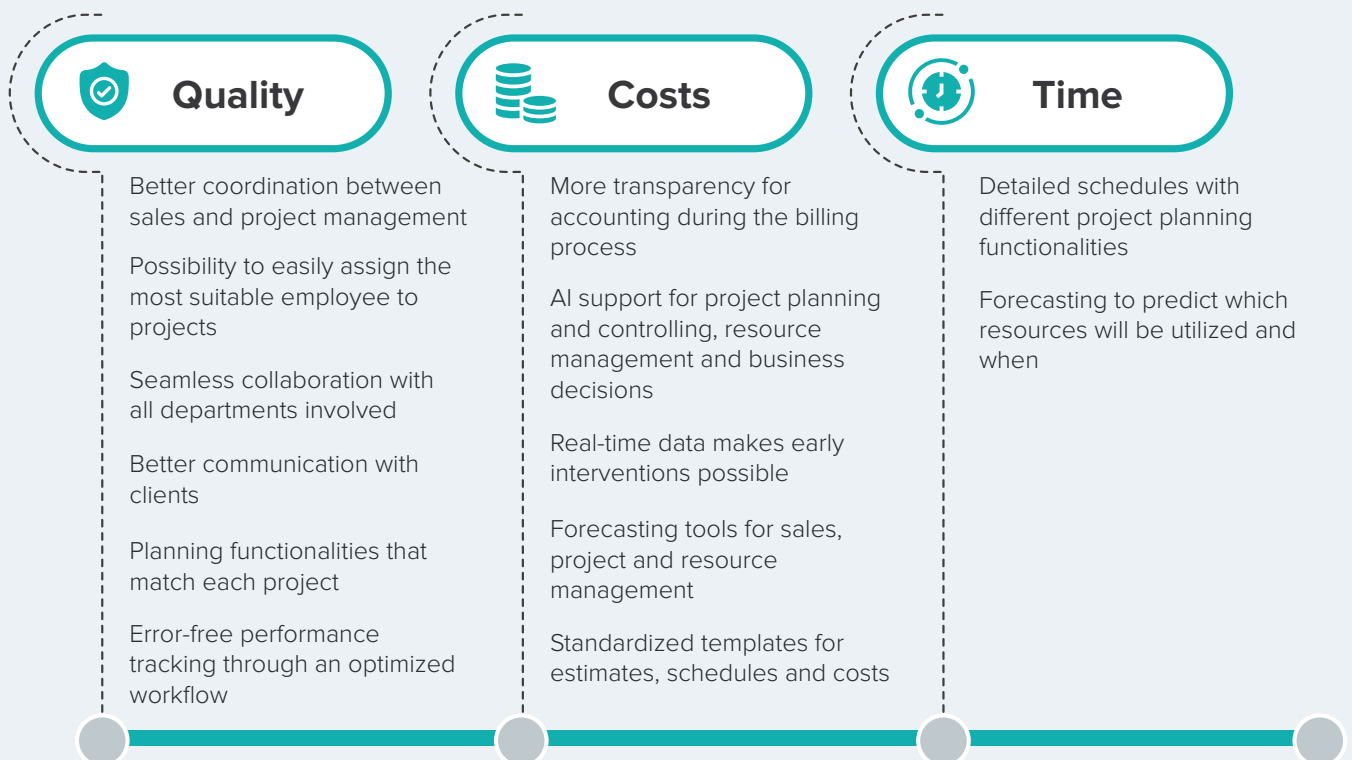
## How to make projects more predictable

Customer satisfaction depends on whether the goals that were set or promised before the start of the project are met or not, especially deadlines and budgets. However, as projects are made up of many interdependent tasks and require different resources, they are not always easy to predict.

### Predictability in the project business means knowing:

- which resources are needed and when
- when the next phase of the project starts
- what costs will arise
- when the project will be completed

There is a very clear focus on the factors quality, costs and time. Project Operations offers various functionalities for handling projects as well, fast and cost-effective as possible:



## The whole project lifecycle in one solution

With Project Operations, each part of the project business benefits from different functionalities that meet their requirements.

### Sales: more deals, a shorter sales cycle

The sales team can calculate sales opportunities in Project Operations or import them from another CRM system. For quoting, estimates can be made based on previous similar projects and then standardized templates can be used to quickly develop a detailed estimate, a schedule and monetary values for the quote.

The work breakdown structure can at first be established with including generic resources and prices later be calculated with various dimensions (e.g. experience, location, skills). That way, quotes end up more accurate.



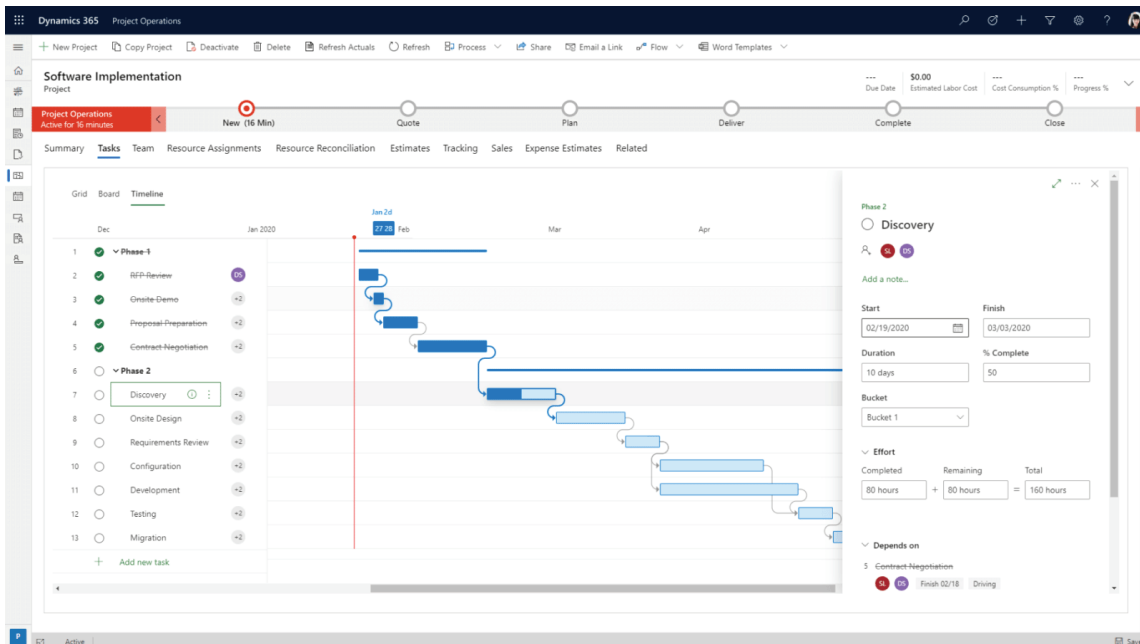


## Project management: better understanding, more precise planning

Once there is a project deal, sales hands it over to the project management. Since project managers work in the same system, they can view quotes and project plans, and thus better understand what the customer expects or what was promised. This puts the project on a solid foundation.

Project Operations provides project managers with a number of features that allow more precise planning.

Whether waterfall or agile – they are well-equipped with Kanban planning views, Gantt charts and work breakdown structures for optimal project management. They can also make accurate estimates for labor costs, expenses and material.



As the project progresses, they can track its progress with dashboards to keep track of costs, duration and value. Any changes to work packages or resources automatically lead to an update of costs and revenue.

Real-time tracking and integrated AI insights make it possible to intervene early when the project takes unexpected turns. As a result, project managers stay in control and can intervene in time to ensure that the project is completed on time and on budget.

Project Operations also ensures that project managers won't have to go without their favorite tool, Microsoft Project. Its features are available directly within the application through a native integration of Project for the Web. Alternatively, the project plan can also be imported to and edited in Microsoft Project.



## Resource management: finding the right people faster

---

Essential for the success and profitability of a construction project is the project team. In Project Operations, resource managers have all the insights they need into project requirements and resource availability and can thus assemble the ideal team.

The native scheduling tool Universal Resource Scheduler facilitates this process. It enables resource managers to find the most suitable employee at any time (based on criteria such as skills, costs and availability).



This does not only ensure that project goals are met, but also customer satisfaction and optimal resource utilization. Employees will be happy with their work, because they won't feel over- or under-challenged and thus be able to perform at their best.

By the way: In Project Operations, resources do not only refer to (external) employees. They also include equipment, vehicles and the like.



## Team members: more productive collaboration, easier performance tracking

Through the integration of Microsoft Teams into Project Operations, project team members have a place where they can communicate quickly and productively at any time, from any location and on any device – both, with each other as well as people on the customer's side or with subcontractors. This improves communication and productivity.

The screenshot displays the Project Operations software interface. The top navigation bar includes options like 'Edit', 'Go to', 'Recall', 'Approve', 'Reject', 'Distribute amounts', 'Post expenses', 'Subledger journal', 'Budget check', 'Header receipts', 'Post expense report', 'Print', 'Email report', 'Workflow', and 'Options'. The main content area is titled 'Expense report for Amber Rodriguez - 000033, Demo @ Adventure works | AMBER RODRIGUEZ - 000033'. It features a 'Workflow' dropdown menu with options: 'Approve', 'Reject', 'Delegate', 'Recall', and 'View history'. The interface is divided into several sections: 'Expense report header', 'Expenses' (listing items like 'None', '350.00 USD', '190.00 USD', '35.00 USD', '50.00 USD', and '500.00 USD'), 'Receipts', and 'Additional information'. A summary table at the bottom shows: Total amount: 1,125.00; Amount paid to employee: 0.00; Amount paid to credit card: 35.00; Personal: 0.00; Currency: USD.

Time and expense tracking are often inconvenient, yet necessary. Luckily, Project Operations makes this tedious task much easier by making time and expense tracking available via desktop and mobile app, and can thus be implemented with just a few clicks. For example, times can be transferred from planning or from the user's personal calendar to time tracking.



## **Project accounting: generating correct invoices faster**

---

Project Operations gives project managers and accountants access to the same information. During the course of a construction project, all data is created within the application, which means that project managers no longer must ask the accountants what they are allowed to invoice.

Invoices can be generated and customized directly without any manual effort or additional solutions, and according to a fixed price, effort or a combination of both. Various currencies and accounting principles are possible, too.

By connecting Dynamics 365 Finance, Project Operations becomes a service-based ERP system. However, with the help of open APIs, external ERP systems can also be integrated to extend specific accounting functionalities.



## Management: more insights, better decisions

In a heterogeneous IT landscape, it is difficult for a company's management to summarize insights from different systems. In Project Operations, they have access to the data from all project stakeholders across all areas and view real-time financial assessments as well as other KPIs on dashboards, for example resource utilization, forecasting and budgeting. Microsoft Power BI makes it easy to visualize this data and to share it with others.

This provides decision makers with more data they can base informed business decisions on and come up with a more coherent overall business strategy.



# Construction project management with proMX

Long durations, complex project structures and a high number of testing and working steps – that is what construction projects are characterized by. To meet industry specific needs, construction companies need a tailored software solution.

## Support in every project phase

proMX 365 for Construction is a vertical solution specifically designed for engineers and architects to be used in construction projects and can be optimally applied to all daily processes without any media disruptions. It is based on Microsoft Dynamics 365 Project Operations and enhances its generic functionalities with industry-specific features.



## Define opportunities

Custom entities enable you to define the object to which the opportunity refers and select industry-specific categories for your opportunity.

## Set up orders

Once an opportunity is won, you can turn it into a project. Define the project type and add some details like the location, the project scope, a short description and the project manager. Also assign specific objects to specify the type of building.

## Structure projects

Gantt charts with multi-project, multi-customer view allow you to structure and edit construction projects. Link project tasks in various ways with one another easily.

## Assign resources

The resource planning feature gives you an overview of your resources' workload and helps to allocate them smarter.

## Stay on top of project progress

Maintain control of project performance with all important controlling features in the same view. Keep track of actual hours, chargeable hours, milestones and your KPIs.

## Control budgets

Maintain projects with different stages via customized business workflows and approve also large budget planings in construction projects.

## Track working hours and expenses

All team members can create time entries from anywhere in the system without switching to another section thanks to the Quick Create area. Alternatively, it is possible to set time entries with a precise start and end time in the calendar view. In the same view any expenses occurred while executing a project task can be recorded as well.

## Identify risks

Add your risk points manually and the system will create a risk matrix for your construction project.

## Manage absences and travels

Administer holidays and travel activities of your construction agents.

## Create individualized invoices

Create project specific bills and cost rates according to the preferences of your customers.

proMX 365 for Construction is user-friendly and quickly adaptable to individual business requirements. The solution helps you simplify complex construction processes, complete projects on schedule and within budget and complete your tasks more efficiently.

The screenshot displays the Dynamics 365 Project Service interface for the 'Reconstruction Hospital' project. The project is currently in the 'Active (53 D)' stage. Key details include:

- Project Name:** Reconstruction Hospital
- Description:** Hospital should be renovated. Mainly the external facade and electronics assembly.
- Project Scope:** Customer driven
- Customer:** Vestibulum Ltd
- Object:** Sacred Heart Hospital
- Project Type:** Standard
- Contracting Unit:** proMX
- Project Manager:** Sebastian
- Project Status:** Active (53 D)
- Trend:** Stable

Key Performance Indicators (KPIs) shown:

- Actual Hours: 24
- Chargeable Hours: 62.5
- Total Recorded Hours: 62.50
- Actual Assigned Hours: 448.00
- Last updated: 7/20/2020 5:00 PM
- Hours KPI: Green
- Budget KPI: Green
- Resource KPI: Green
- Customer Satisfaction: Yellow

Additional information includes the due date (8/17/2020), cost consumption (33.41%), and progress (5.36%). A timeline shows the start date (6/11/2020) and estimated finish date (8/17/2020). A task log entry indicates 'Task completed by Sebastian' on 5/28/2020.

The project overview shows you details about your construction projects, for example, how many hours your team has already worked on them and how many are chargeable. You can also monitor the status of your KPIs and customer satisfaction here.

The screenshot displays the Dynamics 365 Project Service interface for the 'Reconstruction Hospital' project, with the 'Risks' tab selected. The project is currently in the 'Active (52 D)' stage. The 'Risks' section shows a list of risks, including:

- Budget
- COVID19 Lockdown
- Management Decisions
- Other Projects
- Time Management
- Vacation and Absences

A risk matrix is displayed on the right side of the screen, showing the relationship between Consequence (Y-axis) and Likelihood (X-axis). The matrix is a 5x5 grid with cells colored based on risk level (Green for low, Yellow for medium, Red for high) and containing a risk score (1-5).

Consequence	1	2	3	4	5
5			1	1	1
4					
3			1	1	1
2		1			
1				1	

Define potential risks and the system will create a risk matrix based on them.

## Case study: all covered in one solution

proMX has experience with working with different companies from the construction and engineering sector and offering them a helping hand with their digital transformation. In the case study we prepared for you, you will learn how one of our customers optimized their project management by implementing and adapting modern and customizable tools.



### The project:

**Size:** Large (10,000+ employees)

**Products:**

-  Dynamics 365 Project Operations
-  Power Apps
-  Azure technology stack
-  Power BI

**Summary:**

- ✓ Dynamics 365 Project Operations replaced the proprietary solution, which was spread across several tools to facilitate collaboration, project and resource management.
- ✓ Applications developed by the company itself with Microsoft Power Apps complement the solution.
- ✓ With state-of-the-art technologies quickly adaptable to changing business situations, the company is now also prepared for potential disruptions.

## About the company

The international company engineers buildings for their corporate customers. Its key competencies are designing concepts for building automation, fire safety, security, energy efficiency and sustainability.

## Initial situation

Typically, the company realizes large-scale projects. The previous proprietary solution was not well suited for that. It was spread across several tools and thus data was stored in various disconnected digital folders. That made project management time-consuming and nerve-wrecking.

The coordination of resources was complicated, too, and it took the project and resource managers a great deal of time and effort to assign the appropriately skilled engineers that were available in terms of time and location to the projects.

## Challenges

The company was looking for a technical solution to streamline business processes and process projects from start to finish in one solution.

One of the project goals was to enable a frictionless collaboration among engineers within Project Operations. Another objective was to provide project and resource managers with the ideal environment to plan and control projects and resources.

They also had some specific requirements which a generic solution could not meet.



## Solution

The combination of the company's open-mindedness towards new technologies and proMX' expertise led to the development of a unique tool. Project Operations – as the control center – the Microsoft Dataverse, the reporting tool Power BI, self-developed applications based on Power Automate and Power Apps now form a cohesive, productive solution.

The project execution followed the agile SCRUM method in Microsoft Azure Dev Ops. That means proMX implemented all processes step by step. The company tested them immediately and gave their feedback, which, in turn, was directly implemented by proMX when possible.

## Results

The new working environment based on Project Operations fulfills the company's requirement to cover the complete process from project opening and clarification, detailed planning and project management to project closure.

It facilitates collaboration among engineers as well as project and resource management. The built-in Microsoft Project workspace guarantees efficient and effective project planning, while the feature for resource planning in Project Operations, helps assign engineers to projects according to their skills, location and availability. Thanks to exact calculations in the background, project parameters like costs and duration can be predicted more precisely.

The integration with Autodesk Forge allows architects and engineers to work on plans and share them directly in the solution.

# We offer a helping hand in your digital transformation

The ideal digital transformation partner is not only an expert in theory and technology but also in its customer's industry. Our consultants are familiar with the processes, priorities and challenges of the construction industry. Contact us!

[www.proMX.net](http://www.proMX.net)



**look@proMX.net**



**+49 (9 11) 81 52 3-0**



**+1 (786) 600 2840**

